

BYVAGIN, Boris Borisovich; FINSKER, Z.G., doktor khim. nauk, prof.,
otv. red.

[Electrography and structural crystallography of clay
minerals] Elektronografiia i strukturnaia kristallografiia
glinistykh mineralov. Moskva, Izd-vo "Nauka," 1964. 281 p.
(MIRA 17:8)

"Connection of lattice symmetry and generalized symmetry in reciprocal space."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome,
9 Sep 63.

Inst of Crystallography, AS USSR, Moscow.

Effect of the elongated form of crystals on the intensity of reflexes
in electron diffraction pictures of laminated textures. Kristallografiia
7 no.6:958-959 N-D '62. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Electron diffraction examination) (Crystallography);

ZVIAGIN, B. B., kand. geol.-mineral. nauk

"Electron microscopy of metals; apparatus, research methods
and preparation of specimens" by G. S. Gritsaenko, E. S.
Rudnitskaia, A. I. Gorshkov. Reviewed by B. B. Zviagin.
Vest. AN SSSR 33 no.1:135-136 Ja '63. (MIRA 16:1)

(Bibliography—Electron microscopy)
(Gritsaenko, E. S.)
(Rudnitskaia, E. S.)
(Gorshkov, A. I.)

BYAPIN, S.B., MISCHENKO, K.S.

Electron diffraction data on the structure of phlogopite-biotite.
Kristallografiia 7 no.4:623-627 J1-Ag '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Electron diffraction examination) (Phlogopite) (Biotite)

ZYBACHIN, B.E.; SHAKHOVA, R.A.; SHITOV, V.A.

Some characteristics of the distribution of clay formations
based on structural and mineralogical indicators as revealed
by electronographic data. Trudy VSEGEI 72:57-73 '62.

(Clay--Analysis)

(MIRA 15:9)

ZVIAGIN, B.B.; FRANK-KAMENETSKIY, V.A.

Concerning E.N. Eliseev's article "Determination of the sizes of clay elementary cells by the X-ray powder pattern (debyeograms)." Min.sbor. no.14:399-402 '60. (MIRA 15:2)

1. Vsesoyuznyy geologicheskii nauchno-issledovatel'skiy institut, Leningrad, 1. 2. Gosudarstvennyy universitet imeni A.A. Zhdanova, Leningrad.

(Clay)
(X-ray crystallography)
(Eliseev, E.N.)

~~ZAKHAROV, E.B.~~ FRANK-KAMENETSKIY, V.A.

In regard to E.N. Eliseev's response to our remarks. Min. sbor.
no.15:406-409 '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut,
Leningrad, i Gosudarstvennyy universitet imeni A.A. Zhdanova,
Leningrad.

(Clay--Analysis)

(X-ray crystallography)

S/070/62/007/006/020/020
E202/E492

AUTHOR:

Zvyagin, B.B.

TITLE:

The effect of the elongated shape of crystals on the distribution of the intensity of reflections in the electronograms derived from platelike textures

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 958-959

TEXT: The author observed the above phenomena on sepiolite and palygorskite crystals and found that the elongated form of crystallites is also indicative of the intensity distribution of reflections derived during the electronographic study of the texture. Assuming the direction of elongation coincident with the principal axis, the inclinations of the crystallites towards the plane of the base of the texture take place chiefly due to the rotation around the principal axis. Hence, it is concluded that each point of the inverse lattice is formed as a result of such a rotation under a certain angle. In this way a spherical belt is generated. The author develops in detail the relations existing in a geometrical model describing such mechanism and formulates the conditions of reflections for the orthogonal and monoclinic lattices. It is suggested that the above model may

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The effect of the elongated ...

S/070/62/007/006/020/020
E202/E492

also be used in the identification of electronogram reflections.
There is 1 figure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii
institut (All-Union Scientific Research Institute of
Geology)

SUBMITTED: April 19, 1962

Theory of the polymorphism of micas. Kristallografiia 6
no.5:714-726 S-0 '61.

(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Mica) (Crystallography)

EVYAGIN, B.B.

Theory of the polymorphism of two-layer (kaolin-like) minerals. Kristallografiia 7 no.1:51-65 Ja-F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.

(Crystallography)

S/070/62/007/004/010/016
E073/E335

AUTHORS: Zvyagin, B.B. and Mishchenko, K.S.

TITLE: Electron-diffraction data on the structure of
phlogopite-biotite

PERIODICAL: Kristallografiya, v. 7, no. 4, 1962, 623-627

TEXT: In preliminary experiments no individual differences could be detected between X-ray diffraction patterns of the variants of these minerals which would reflect the peculiarities in the chemical composition. This was taken as proof of statistical distribution of the isomorphous cations. Therefore, only the properties which are generally characteristic were studied, on electron-diffraction patterns of the textures of one specimen from a collection. 59 reflexions $h0\ell$ and 40 reflexions $0k\ell$ were observed and indexed. The distribution of the reflexions on the electron-diffraction pattern satisfies the monoclinic cell with the parameters: $a = 5.28$; $b = 9.16$; $c = 10.3 \text{ \AA}$; $\beta = 99^\circ 50'$ and the trigonal cell with $c = 30.5 \text{ \AA}$. After two synthesis cycles, the R-factors, which reached values of 17.2% for the reflexions $h0\ell$ and 20.4% for the reflexions $0k\ell$, ceased to improve. The atom coordinates of the phlogopite-biotite

Card 1/3

Electron-diffraction data

S/070/62/007/004/010/016
E073/E335

structure corresponding to this stage as well as the interatomic distances are tabulated and a sketch is given of the structure (normal projection onto the plane xy). The accuracy of determination of the coordinates, evaluated according to the formula of Vaynshteyn, was 0.02 for K atoms, 0.03 for Si, Al and Mg atoms and 0.04 Å for O atoms. From the ideal model the real structure differed by the fact that the tetrahedra formed a motive with ditrigonal loops, corresponding to a shift of the tetrahedra about the vertical by an angle of 5.5° relative to the base, as compared with the position of strictly hexagonal loops. On the other hand, the top and the base of the octahedron did not show any shift relative to the positions corresponding to cubic packing but the octahedra themselves were strongly flattened. Since the Al atoms are probably statistically distributed among the tetrahedral positions, it was not possible to establish the structural distortions caused by them. Probably, in the same way as in muscovite, such substitutions bring about certain shifts of O atoms but, due to their statistical nature, this does not lead to a change in the monoclinic angle as compared with its ideal value.

Card 2/3

Electron-diffraction data S/070/62/007/004/010/016
E073/E335
ASSOCIATION: There are 4 figures and 3 tables.
Vsesoyuznyy nauchno-issledovatel'skiy
geologicheskii institut (All-Union Scientific
Research Geological Institute)
SUBMITTED: June 13, 1961

ZVYAGIN, B.B.; SHCHEGLOV, A.D.

Nacrite from the fluorite deposit of western Transbaikalia and its structural characteristics according to the data of electron diffraction examination. Dokl. AN SSSR 142 no.1:185-188 Ja '64.
(MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
Predstavleno akademikom N.N. Belovym.
(Novo-Pavlovka--Nacrite)
(Electron diffraction examination)

Purpose and principles of the complication and estimation of different classifications of clay minerals; in connection with the discussion innitiated by the Clay Committee at the International Geological Congress. Zap.Vses.min.ob-va 90 no.6:750-754 '61.
(Clay--Congresses) (MIRA 15:2)

VAINSHTEYN, B.K.; PINSKER, Z.G.; LOBACHEV, A.N.; ZVYAGIN, B.B.

Important problems in the theory of modern electron-
diffraction structure study; survey. Zav.lab. 27 no.6:673-682
'61. (MIRA 14:6)

(Electron diffraction examination)

EVLAGIN, B.B.; DOLOMANOVA, Ye.I.; SOBOLEVA, S.V.; MOLEVA, V.A.

Diocahedral Al-mica 1M from the Levo-Ingodinsk tin-tungsten
deposit in Transbaikalia, Dokl. AN SSSR 165 no.2:410-412
N '65. (MIRA 18:11)

1. Submitted May 21, 1965.

ZARYANOV, K.H.; ZAVLADIN, I.V.; ZVYAGIN, B.I.

Method of determination of the depth of cementation of steel
alloys by isothermal hardening. Zav.lab.21 no.6:687-692 '55.
(Cementation (Metallurgy)) (MIRA 8:9)

11/5
661.6
.29
1755

Stroitel'noye cherecheniye (Structural designing) 1 ed. 2., parar.
1 dop. Kiev, Mashgiz, 1955.
79 p. illus., diags., tables.
"Literatura": P. 73.

ZYYAGIN, B.K.; CHEBAYEVSKAYA, L.P., red.; SHVETSOV, S.V., tekhn.
red.

[Structural drawing] Stroitel'noe chershenie. Izd.3., perer.
i dop. IAroslavl', Rosvuzizdat, 1963. 82 p. (MIRA 16:5)
(Structural drawing)

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk; MATS, L.I., inzh., nauchnyy
red.; KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Manual on architectural drawing] Spravochnik po stroitel'nomu
chercheniyu. Leningrad, Gos.izd-vo lit-ry po stroit., arkhitekt. i
stroit. materialam, 1958. 167 p. (MIRA 12:3)
(Architectural drawing)

ZVIAGIN, Boris Konstantinovich; KHAGEMEYSTER, Ye., red.

[Mechanical drawing; "Engineering and structural drawing"
section. Manual] Mashinostroitel'noe cherchenie; razdel
"Inzhenerno-stroitel'noe cherchenie." Uchebnoe posobie.
Leningrad, Severo-zapadnyi zaachnyi politekhn.in-t, 1959.
35 p. (MIRA 13:10)

(Mechanical drawing)

4VIAGIN, B.M.

General theory and methods for calculating the results of crushing
and subsequent gravity concentration of rocks. Zap. LGI 36 no.3:
43-64 '58. (MIRA 16:5)

(Rocks)

OVYACHIN, G.M., inzh.

Transfer of water over the crest of a curvilinear
spillway with a sharp rim. Izv. vys. uchët. zav.;
energ. 5 no.10:115-123 0 '62. (MIRA 15:11)

1. Moskovskiy inzhenerno-stroitel'nyy institut. Predstavlena
kafedroy gidrotekhnicheskikh sooruzheniy.
(Spillways)

ZVIAGIN, G.Z.

Welding of rails for a continuous track. Put' i put.khoz. 5 no.4:
42-43 Ap '61. (MIRA 14:7)

1. Nachal'nik rel'sosvarochnogo poyezda, st. Lodeynoye pole,
Oktyabr'skoy dorogi.

(Railroads—Rails—Welding)

S/137/61/000/011/053/123
A060/A101

AUTHOR: Zvyagin, G. Z.

TITLE: Welding of rails for a buttless track

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 27, abstract
11Yel69 ("Put' i putevoye kh-vo", 1961, no. 4, 42-43)

TEXT: In six months from October 1960 the rail-welding train of the Oktyabr' railroad system welded 90 km of rails for a buttless track. The production flow on the train is improved, and in particular, the length of the roller path is increased, taking into account the space for checking the welded joints using the defectoscope УЗД НИИМ-5 (UZD NIIM-5); the distance between the welding location and the compartment where the normalization is carried out is increased, allowing the weld to cool down sufficiently in passing from one work-station to another. The rail-cutting mill for cutting out defects is set up near the welding machine, however, the cutting may be carried out at any spot of the line. Prior to welding the rails undergo trimming, the factory butt-cut-off is carefully checked and is carried out again in case of necessity. The welding proceeds on the resistance butt-welding machine MCTP-500-4 (MSGH-500-4)

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S/137/61/000/011/053/123
A060/A101

Welding of rails for a buttless track

from the factory "Elektrik". A productivity of 0.9 - 1.2 km of track is attained in three-shift operation. The welding conditions are: setting pressure - 35 tons, flash magnitude - 20 mm. The stationary value of crushing load is 200 - 220 tons at a deflection of 30 - 50 mm. The continuous feed of the rails to the welder has been introduced lately, for which purpose the rails are connected to each other by small light grapples.

Ye. Terpugov

[Abstracter's note: Complete translation]

AFANASYEV, A.A., ZVYAGIN, B.K.

Shoe Industry

Planning shoe factories. Log.prom. 12, no. 7, 1952,

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952, ~~1953~~, Uncl.

The theory of rock crushing. II. Division of the particles of the products of crushing into two fractions and the calculation of the average composition of these fractions. B. M. Zvyagin, R. B. Rosenbaum, O. M. Todor, and A. Z. Yurovskii. *Izv. Akad. Nauk S.S.S.R., Otd. khim. Nauk* 1951, 1218-20; cf. *ibid.* 1950, 1002. — A method is given for detg. the relative no. of floating and depositing particles by distributing them into 2 fractions. Also, a method for detg. the av. compn. of the floating and depositing fractions is provided. The discussion given is math. G. S. Mary

S/044/62/000/006/067/127
B168/B112

AUTHORS: Todes, O. M., Zvyagin, B. M.

TITLE: A linear method of determining the distribution function of inclusions from their sizes

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 15, abstract 6V78 (Zap. Leningr. gorn. in-ta, v. 37, no. 3, 1959 (1961), 58-63)

TEXT: The case where inclusions (impregnations) have a spherical form (report 6V77) is investigated. A linear method of determining the size distribution of inclusions, in which the lengths of segments of intersections of inclusions are measured as arbitrary straight lines, is proposed. It is noted that this method is simpler, both theoretically and experimentally, than the planimetric method described, for instance, in a work by Verzhbinskiy (report 6V77), although of course it is less accurate. [Abstracter's note: Complete translation.]

Card 1/1

TODES, O.M., prof.; ZVYAGIN, B.M., dots.; BOGORAD, Ye.A., nauchnyy sotrudnik

**Petrographic method of determining the true size of impurities.
Izv.vys.ucheb.zav.; gor.shur. no.4:125-128 '58.**

(MIRA 11:11)

**1. Leningradskiy gornyy institut i Institut goryuchikh iskopa-
yemkh AN SSSR.**

(Coal preparation)

AMOSOV, I.I.; ZVIAGIN, B.M.; TODES, O.M.; YUROVSKIY, A.Z.; MARCHENKO,
M.G., redaktor; TERNIS, I.G., redaktor; POLYAKOVA, T.V., tekhnicheskiiy redaktor.

[Engineering calculations on the theory of exposing minerals in the process of dressing coal.] Inzhenernye raschety k teorii raskrytiia mineralov v protsesse obogashcheniia uglei. Moskva, Izd-vo Akademii nauk SSSR, 1955. 157 p. (MLRA 8:12)
(Coal preparation)

USSR/Minerals - Ores, Dressing

Dec 51

"Theory of Rock Crushing. III. Separating Products of Coarse Crushing in Two Sizes." B. M. Zvyagin, O. M. Todes, A. Z. Yurovsky

"Te Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1825-1840

Attempts to establish optimum conditions of crushing initial products for concn in form of comparatively coarse particles. Discusses distribution of crushed products according to compn, evaluation of final vol of inclusions, integral

205T82

USSR/Minerals - Ores, Dressing (Contd)

Dec 51

Function of distribution and continuous distribution, sepn in 2 fractions, and yield and concn deg of floated product. Submitted A. M. Terpil-gorev.

205T82

USSR/Mining - Mineral Dressing, Wet
Classification
Aug 51

"On the Theory of Rock Crushing. II. Separation
of Crushed Products Into Two Fractions and Cal-
culation of Their Mean Composition," B. M. Zvy-
agin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8,
pp 1218-1229

Develops method for detg relative number of
floated and settled particles during sepn in
liquid into 2 fractions. Suggests also method for
detg mean compn of both fractions and presents

205194

USSR/Mining - Mineral Dressing, Wet
Classification (Contd)
Aug 51

graphs for practical calcs. Gives numerical ex-
ample of calcn. Submitted by Acad A. M. Terpi-
gurev 16 Dec 50.

205194

ZVYAGIN, B. M.

USSR/Minerals - ~~Crushing~~

Jul 50

"Concerning the Theory of Rock Crushing," B. M.
Zvyagin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy, Inst of Fuel Resources, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 1062-
1070

Develops method for analytical calculation of re-
lation between composition of crushed particles
degree of crushing. Method permits finding func-
tion of distribution of crushed particles accord-
ing to composition in process of fine crushing. Sub-
mitted by Acad A. M. Terpigorev.

168756

FDD

ZVYAGIN, B. M.

FDD

Crushing - Ores The

Theory of Crushing of Mineral Rocks," B. M. Zvyagin,
Mining Open of Mineral Grains," A. Z. Yurovsky
B. Rozenbaum, O. M. Todes, A. Z. Yurovsky

12 Ak Nauk SSSR, Otdel Tekh Nauk" No 7,
1062-1070

Formulas governing degree of breaking-up of minerals
crushing crushing have been refined and verified. Authors have
developed method for solving more important problem:

162197
Jul 50

SSSR/Mining - Crushing (Contd)
Submitted 10 Feb 50

to find distribution function of crushed particles
according to their composition.
by Acad A. M. Terpigorev.

162197

ZVYAGIN, B.N.

New automatic match processing machine. Der. prom. 15 no.1:
4-5 Ja '66. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut derevoobrabaty-
vayushchey promyshlennosti.

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk, dots.; KRASIL'NIKOV, A.D.,
dots., retsenzent; LEUTA, V.I., inzh., red.; RUDENSKIY, Ya.V.,
tekhn.red.

[Architectural drawing] Stroitel'noe cherechenie. Izd. 2-oe, perer.
i dop. Kiev, Gos.nauchno-tekhn.izd-vo mashino-stroit. lit-ry.
1955. 79 p. (MIRA 11:2)
(Architectural drawing)

ZVYAGIN, G.Z., inzh.

Rail welding on two production lines. Put' i put. khoz. 9 no.12:
17 '65. (MIRA 19:1)

1. Stantsiya Lodeynoye Pole, Oktyabr'skoy dorogi.

S/181/63/005/002/052/051
B102/B186

24.7700

AUTHOR:

Zvyagin, I. P.

TITLE:

The position of the Fermi level in highly alloyed semiconductors

PERIODICAL:

Fizika tverdogo tela, v. 5, no. 2, 1963, 581 - 585.

TEXT: The effect of high impurity concentrations on the position of the Fermi level is investigated for various degrees of electron gas degeneracy. Electron and impurity concentrations are assumed to be equal and the semiconductor to be isotropic (cf. FTT, 3, 3009, 1961). State density and electron concentrations are calculated from

$$\rho(E) = \frac{4}{(2\pi)^3} \int \ln G(\vec{k}, E) d\vec{k}, \quad (2a)$$

$$n = \int \frac{\rho(E) dE}{1 + \exp[\beta(E - \mu)]} \quad (2b)$$

where $\beta = (\kappa T)^{-1}$, μ - chemical potential, $G(\vec{k}, E)$ the retarded anticommutative Green function averaged over the positions of the impurities;
 $G^{-1}(\vec{k}, E) = G_0^{-1}(\vec{k}, E) + M(\vec{k}, E)$ and $M(\vec{k}, E) = M^{(1)}(\vec{k}, E) + M^{(2)}(\vec{k}, E)$; G_0 is

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S/181/63/005/002/032/051
 B102/B186

The position of the Fermi level ...

the Green function of an ideal gas and $M^{(1)}, (2)$ are the mass operators of electron-impurity and electron-electron interactions. For a completely degenerate gas the operator $p = n\sigma(k_F)/k_F$ is very small and

$$\begin{aligned} \operatorname{Re} M^{(1)}(k, E) &= M_1(k^2, E) = \\ &= \begin{cases} c \frac{E - k^2 - a^2}{(E - k^2 + a^2)^2 + 4k^2a^2} & \text{при } E > 0, \\ 0 & \text{при } E < 0; \end{cases} \end{aligned} \quad (3a)$$

$$\begin{aligned} \lim_{\epsilon \rightarrow +0} \operatorname{Im} M^{(1)}(k, E - i\epsilon) &= M_2(k^2, E) = \\ &= \begin{cases} \frac{c_1 E^{1/2}}{(E + k^2 + a^2)^2 - 4k^2E} & \text{при } E > 0, \\ \frac{c_1 \chi^{1/2}(E) \theta[\chi(E)]}{(\chi(E) + k^2 + a^2)^2 - 4k^2E} \left[1 - \frac{0}{[\chi(E) + (a + \sqrt{-E})^2]} \right]^{-1} & \text{при } E < 0; \end{cases} \end{aligned} \quad (3b)$$

$$M^{(2)}(k; E) = -\frac{2}{\pi} \left(\mu^{1/2} + \frac{\mu - k^2}{2k^3} \ln \left| \frac{\mu^{1/2} + k}{\mu^{1/2} - k} \right| \right) \quad (6)$$

Card 2/4

S/181/63/005/002/032/051
 B102/B186

The position of the Fermi level ...

where $c = 8\pi n\chi^{-1}$, $c_1 = 16\pi n$, $k^2 = \chi(E)$ is the solution of $k^2 - E + M_1(k^2, E) = 0$.

The electron concentration is obtained as

$$n_1 = (6\pi^2)^{-1} c^3, \quad (5a)$$

$$n_2 = (3\pi^2)^{-1} \mu^{3/2} \left[1 + 1.3 \left(\frac{c}{\mu^2} \right)^{1/2} \right], \quad (5b)$$

$$n = (3\pi^2)^{-1} \mu^{3/2} [1 + 0.4 n^{-1/2}]. \quad (5c)$$

and is interrelated with the Fermi level position by $\mu = \mu_0 (1 - 0.27 n^{-5/8})$, where $\mu_0 = (3\pi^2 n)^{2/3}$ is the ideal-gas Fermi level. If the correction for electron-electron interaction ($\Delta\mu = -2\mu^{1/2}/\pi$) is taken into account this relation changes over to $\mu = \mu_0 (1 - 0.2 n^{-1/3})$. Thus, the electron-electron interaction predominates in a completely degenerate semiconductor. The results obtained are generalized for $T \neq 0$, $\beta^{-1} \lesssim \mu$; p is still small, therefore perturbation theory is also applicable.

$$n = (2\pi^2)^{-1} \beta^{-3/2} \left[F_{3/2}(\beta\mu) + 3.5 \frac{\lambda^{1/2}}{1 + \exp(-\beta\mu)} - 2\lambda^{1/2} F_{3/2}(\beta\mu) \right], \quad (11)$$

$$\mu = \mu_0 [1 - 0.27 n^{-1/2} - 0.82 (\beta\mu_0)^{-2} (1 - 0.1 n^{-1/2})]. \quad (12)$$

The position of the Fermi level ...

S/181/63/005/002/032/051
 B102/B186

$$M^{(2)}(k, E) = -\frac{2}{\pi k} \int_0^{\infty} \frac{k' dk' \ln \left| \frac{k+k'}{k-k'} \right|}{1 + \exp[\beta(k'^2 - \mu)]} \quad (13),$$

$\lambda = 0.5d^{1/2}$ if $\beta\mu \gg 1$, $M^{(2)}(k, E)|_{E=\mu_0} = -\frac{2}{\pi} \mu_0^{1/2} (1 + 0.5(\beta\mu_0)^{-2})$. (14). The result that the corrections for electron-electron interaction exceed those for electron-impurity interactions (if $\beta^{-1} \gg \lambda$) holds both at low and at medium temperatures. If in (12) and (14) are only those corrections are taken into account that play a great role with $n \rightarrow \infty$,

$$\mu = \mu_0 \left[1 - \frac{2}{\pi} \mu_0^{-1/2} - \frac{\pi^2}{12} (\beta\mu_0)^{-2} - \pi^{-1} \mu_0^{-1/2} (\beta\mu_0)^{-2} \right]. \quad (15)$$

is obtained; with $n \rightarrow \infty$ μ tends to μ_0 , the chemical potential in the pure semiconductor. When all corrections are taken into account, the degeneracy temperature is obtained as $T_b = T_b^0 (1 - 0.5\mu_0^{-1/2})$. There is 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
 (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: September 18, 1962

Card 4/4

ZVYAGIN, I.P.

Using diagrams in calculating kinetic coefficients. Vest.
Mosk. un. Ser. 3: Fiz., astron. 20 no.5:49-57 S-0 '65.
(MIRA 18:11)

1. Kafedra poluprovodnikov Moskovskogo universiteta.
Submitted May 19, 1964.

ACC NO: AP6033543

SOURCE CODE: UR/0181/66/008/010/2835/2840

AUTHOR: Zvyagin, I. P.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Effect of thermoelectric current on the stability of the electric field and the charge distribution in semiconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2835-2840

TOPIC TAGS: electric field, electron gas, thermoelectric current, semiconductor, temperature, instability

ABSTRACT: The stability of an electric field—charge—temperature—semiconductor system is investigated by means of a set of complete phenomenological equations which describe the distribution of these factors. It is shown that if the thermoelectric current factor is ignored, and if the electron gas is not heated to too high a degree, the conditions which ensue agree with those arrived at earlier by V. L. Bonch-Bruyevich (Fizika tverdogo tela, no. 8, 1753, 1966). The resultant non-

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ACC NR: AP6033543

homogeneity in the pattern of the temperature in the vicinity of the contacts is restricted to an area close to these contacts, and is small in comparison with the size of the sample. This nonhomogeneity does not induce a nonhomogeneous solution for the system's instability region. The author thanks V. L. Bonch-Bruyevich suggesting the study and many valuable discussions of the problem. Orig. art. has: 16 formulas. [Author's abstract]

SUB CODE: 20/ SUBM DATE: 20Nov65/ ORIG REF: 003/ OTH REF: 002/

2/3

STALIN, V.A. and others; DOBROV, Y.I.; ZABOROVSKIY,
S.A., inzh.; ZVYAGIN, I.Ye.; inzh.; KULIKOV, S.N., inzh.; POPOV,
O.V., inzh.

A motor drive with wide-range smooth speed control. Elektrichestvo
no.12:20-23 D '57. (MIRA 10:12)

1.Leningradskiy politekhnicheskii institut im. Kalinina.
(Electric driving)

SOLTAMOV, Bek-Sultan Drisovich. Prinimali uchastiye:
PREOBRAZHENSKIY, L.N., inzh.; KASPAROV, G.D., inzh.;
~~ZVYAGIN, I.Ye., red.~~; KHIVRICH, Ye.D., red. izd-vn;
AKOPOVA, V.M., tekhn. red.

[Automated electric drives in the woodpulp industry]
Avtomatizirovannyye elektroprivody na predpriyatiyakh
tselliulozno-bumazhnoy promyshlennosti. Moskva, Gos-
lesbumizdat, 1963. 268 p. (MIRA 16:12)
(Woodpulp industry--Electric equipment)
(Electric driving)

Veterinary medicine abroad. Veterinariia 40 no.11:73-79 N°63.
(MIRA 17:9)

ZVYAGIN, I.V.; YURCHENKO, V.V.

Prospects for the production of dry immune sera. Veterinarika
(2 no.5:104-105 My '65. (MIRA 18:6)

1. Vsesoyuznyy trust biologicheskoy promyshlennosti Ministerstva
zdravookhraneniya SSSR.

CHOTENKOV, V.P.; BAZHINOV, A.G.; ZVIAGIN, I.V.

Use of β -propiolactone in the production of veterinary biological preparations. Veterinariia 41 no.2:26-27 F '65.

(MIRA 18:3)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva sel'skogo khozyaystva SSSR.

Zvyagin, I. V., Kolesov, S. G.,

"The Seventh International Congress of the Permanent Section on Standard-
ization of Biopreparations."

Veterinariya, Vol 39, no. 1, Jan 1962. pp 82

KOLESOV, S.G.; ZVYAGIN, I.V.

Seventh International Congress of the Permanent Section on
Standardization of Biological Preparations. Veterinariia 39
no.1:82-86 Ja '62. (MIRA 15:2)
(Biological products--Standards)

CHUMAKOV, V.P.; BAZHINOV, A.G.; ZVYAGIN, I.V.

Testing the sterilizing action of beta-propiolactone in the
preparation of biological products. Veterinariia 41 no.11:
23-24 N '64. (MIRA 18:11)

1. Vsesoyuznyy treat biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

BOYKO, A.A.; ZVIAGIN, I.V.

**Veterinary service in the Czechoslovak Socialist Republic.
Veterinaria 41 no.11:112-114 N '64. (MIRA 18:11)**

DONSKOY, Aleksandr Vasil'yevich; LUTSKER, Il'ya Shulimovich;
ZVYAGIN, I.Ye., red.

[Automation of low-temperature electric-heating systems]
Avtomatizatsiia nizkotemperaturnykh elektronagrevatel'-
nykh ustroistv. Leningrad, 1964. 13 p. (MIRA 17:12)

ZVYAGIN, I.Ye.

Servo drive of a regulated high-frequency system. Trudy LPI
240:103-109 '64.

(MMA 17:11)

ZVIYAGIN, L.

A new system of wages is needed for repair and service workers of the truck fleets. Avt.transp. 34 no.4:7-8 Ap '56. (MLBA 9:8)

1. Nachal'nik otдела trada i zarabotnoy platy Leningradskogo tresta
gruzovykh perevozok.

(Wages)

ZVIAGIN, L.M., kand.med.nauk

Intra-osseous transfusions of hydrolysin. Akt.vop.pereb.krovi no.7:
326-329 '59. (MIRA 13:1)

1. Gosptal'naya khirurgicheskaya klinika I Leningradskogo meditsin-
skogo instituta im. Pavlova (zav. klinikoy - prof. F.G. Uglov).
(BLOOD PLASMA SUBSTITUTES)

ZVYAGIN, L.M., kand. med. nauk (Leningrad)

"Special X-ray diagnosis of bone and joint diseases" by
A.E. Rubasheva. Reviewed by L.M. Zviagin. Klin. khir. no.10:83
O '62. (MIRA 16:7)

(BONES—RADIOGRAPHY) (JOINTS—RADIOGRAPHY)
(RUBASHEVA, A.E.)

ZVIYAGIN, L.M.; kandidat meditsinskikh nauk; GIRSHOVICH, E.A.; SOMOVA, V.V.

Transfusion of N.G. Belen'kii's therapeutic serum in insufficient lactation. Akush. i gin. no.3:51-54 My-Je '55 (MLRA 8:10)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (zav. kafedroy-prof. F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav.kafedroy-prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta imeni akad. I.P.Pavlova)

(LACTATION DISORDERS

hypogalactia, ther., serum of Belen'kii)

(BLOOD SERUM

serum of Belen'kii in ther. of hypogalactia)

ZVYAGIN, L.M., kandidat meditsinskikh nauk

**Strangulation of inguinal hernia during labor. Akushi i gin. 33
no.2:104-105 Mr-Ap '57. (MIRA 10:6)**

**1. Iz gosspital'noy khirurgicheskoy kliniki (sav. kafedroy - prof.
F.G.Uglov) i akushersko-ginekologicheskoy kliniki (sav. kafedroy -
prof. I.I.Yakovlev) i Leningradskogo meditsinskogo instituta
imeni akad. I.P.Pavlova.**

(PREGNANCY, COMPLICATIONS OF) (HERNIA)

ZVYAGIN, L.M., kand. med. nauk (Leningrad P-154, Zverinskaya ul. d. 2/5, kv. 50);
YAROSHEVSKAYA, Ye.N., kand. med. nauk

Abstracts of articles received by the editors. Ortop. travm. protez.
24 no.7:75 JI'63 (MIRA 17:2)

1. Iz kafedry gosspital'noy khirurgii (zav. - prof. F.G. Uglov)
I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova i
Detskogo ortopedicheskogo instituta imeni N.I. Turnera (dir. -
prof. M.N. Goncharova).

ZVYAGIN, L.M., kand.med.nauk (Leningrad, pl. L.Tolstogo d.6.8)

BARBOI, Ye.I., kand.med.nauk

Clinical characteristics of hydrolsin L-103 [with summary in English]
Vest.khir. 81 no.8:50-54 Ag '58 (MIRA 11:9)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov)
1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.
(AMINO ACID MIXTURES, THER. use.
hydrolsin L-103 (Rus))

SHEVYAKOV, Lev Dmitriyevich, akademik; ZVIAZH, P. A., stv. red.; KOROVENKOVA,
Z. A., tekhn. red.; PROZOROVSKAYA, V. L., tekhn. red.

[Principles of the theory of planning coal mines] Osnovy teorii
proektirovaniia ugol'nykh shakht. Izd. 2., perer. Moskva, Ugle-
tekhnizdat, 1958. 328 p. (MIRA 12:3)
(Mining engineering)

KOROTKOV, P.A.; LITVINOVA, Ye.I.; Prinsipali uchastiy: ZVYAGIN, M.I.;
ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during
heating and cooling. Izv. vys. ucheb. zav.; Chern. met. 6 no.11:
194-199 '63. (MIRA 17:3)

1. Leningradskiy tekhnologicheskii institut im. Lensoвета.

Grease for guns, etc. M. M. Zvyagin, Russ. 62,435,
Jan. 31, 1958. A mixt. of rubber, mineral oil, soap and
butyl or amyl alcohol or other solvents is specified.

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Treating cracked distillates with zinc chloride. A. VENTIKUS AND N. ZUYAGIN
Nefteyanoe Khozyaistvo 23, 130-9 (1932).—A discussion on the com. possibility of treat-
ment with $ZnCl_2$, including yields of the finished product. A. A. BOHRLINGER

CERAMIC ELEMENT

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CERAMIC MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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ca

Economics of cracking. F. F. DUNAY AND N. Z. ZYKALIN. *Neftekhimicheskiy Zhurnal* 22, 69-80(1937).—The cost of one metric ton of gasoline is 14.51 roubles as compared with 10.80 roubles in the United States. The cost is 21.77 and 20.57 roubles in the Jenkins and Vickers units installed in Russia.

A. A. BORITLINAK

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Economic substantiation of the minimum workable thickness of anthracite beds in the Donets Basin. Ugol' Ukr. 3 no.7:40-45 J1 '59. (MIRA 12:11

(Donets Basin--Anthracite coal)

ZVYAGIN, P.Z., kand. tekhn. nauk.

Minimum thickness required of coal seams for underground mining.
Ugol' 34 no.11:34-39 N '59 (MIRA 13:3)
(Coal mines and mining--Cost)

ZVYAGIN, Pavel Zakharovich; MAYZEL', Leonid Lazarevich; OSTROVSKIY,
S.B., retsenzent; GOLUBYATNIKOVA, G.S., red.izd-va; BEREZSLAVSKAYA,
L.Sh., tekhn.red.

[Economic justification for the minimum workable thickness of
coal seams; underground mining] Ekonomicheskoe obosnovanie minimal'noi
rabochei moshchnosti ugol'nykh plastov; pri podzemnoi razrabotke.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 143 p.
(MIRA 13:11)

(Coal mines and mining)

Comparative effectiveness of the panel and modified
longwall systems for mine development. Ugol' Ukr. 4
no.5:41-42 My '60. (MIRA 13:8)

1. Institut gornogo dela AN SSSR.
(Coal mines and mining)

ZVYAGIN, P.Z.; NILOVSKIY, V.A.

Coal mining industry could and should increase its labor
productivity; from results of the Conference of Ore and
Coal Mining Workers of the Krivoy Rog Basin. Ugol' 35
no.10:6-10 0'60. (MIRA 13:10)
(Krivoy Rog Basin--Coal mines and mining--Labor
productivity)

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720006-3
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720006-3"
KREAGIN, P.; KAMINSKY, I.N., inzh.; POLYAKOV, N.V.;
KHARCHENKO, A.K., kand.tekhn.nauk

For a further upswing of labor productivity in mines of the Rostovugol' Combine. Ugol' 35 no.11:13-17 N '60. (MIRA 13:12)

1. Glavnyy inzhener kombinata Rostovugol'.
(Donets Basin--Coal mines and mining--Labor productivity)

BAGASHEV, Mikhail Kapitonovich; KIRZHNER, David Mironovich; CHETIRKIN, Mikhail Ivanovich. Prinimal uchastiye SURILO, G.V. ZVYAGIN, P.Z.,
otv.red.; GOLUBYATNIKOVA, G.S., red.isd-va; OSVAL'D, B.Ia., red.
isd-va; GALANOVA, V.V., tekhn.red.

[Reference book on the economics of the coal industry] Spravochnik
po ekonomike ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn.
isd-vo lit-ry po gornomu delu, 1961. 418 p.

(Coal mines and mining)

(MIRA 14:4)

ZVYAGIN, P. Z., Doc TECH SCI, "SELECTION OF ^{productivity} ~~OUTPUT~~ AND ^{service} ~~AND~~
LIFE OF COAL MINES." MOSCOW, 1961. (MIN OF HIGHER AND
SEC SPEC ED RSFSR. LENINGRAD ORDERS OF LENIN AND LABOR
RED BANNER MINING INST IMENI G. V. PLEKHANOV). (KL-DV,
11-61, 216).

Effect of the factor of efficiency of capital investments
in determining the productivity of the mine. Ugol' 36
no.6:39-44 Je '61. (MIRA 14:7)

1. Institut gornogo dela imeni A.A. Skochinskogo.
(Mine valuation)
(Coal mines and mining--Finance)

KHARCHENKO, A.K., kand. tekhn. nauk; ZVYAGIN, P.Z., kand. tekhn.
nauk, red.; OSVAL'D, E.Ya., red. izd-va; IL'INSKAYA, G.M.,
tekhn. red.; SABITOV, A., tekhn. red.

[Labor expended per unit of production in coal mining and ways
of reducing it] Trudoemkost' dobychi uglia i puti ee snizheniia.
Rabota vypolnena pod obshchim rukovodstvom A.K.Kharchenko.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962.
506 p. (MIRA 15:5)

1. Akademiya nauk SSSR. Institut gornogo dela.
(Mining engineering) (Work measurement)

APPROVED FOR RELEASE: Thursday, September 26, 2002
ZITACIN, 87, kand. tekhn. nauk; MAYSEF, L.I., kand. tekhn. nauk

Economic efficiency of hydraulic underground mining. Ugol'
37 no.1:38-43 Ja '62. (MIRA 15:2)
(Hydraulic mining)

BABOKIN, Ivan Alekseyevich; ZVIAGIN, F.Z., doktor tekhn. nauk,
retsensent; GAFANOVICH, L.N., kand. tekhn. nauk,
otv. red.

[Technical and economic evaluation of the loss of coal
during mining] Tekhniko-ekonomicheskaya otsenka poter'
uglia v nedrakh (pri razrabotke). Moskva, Nedra, 1964.
94 p. (MIRA 18:2)

KOBY, P.I.; ZVIAGIN, P.Z.; MAYZEL, L.I.; ONUPRIYEV, L.N.; VOYNIK, I.A.

Greater scientific substantiation of planning in coal mines by
introducing technical standards. Ugol' 40 no.9:41-45 S '65.

(MIRA 18:10)

1. Gosudarstvennyy komitet po toplivnoy promyshlennosti pri Gosplane SSSR (for Kagan).
2. Institut gornogo dela im. A.A. Skochinskogo (for all except Kagan).

EVYAGIN, P.Z., doktor tekhn. nauk; SHAVRINA, R.F., red.

[Optimum solutions of mining problems; report at the Scientific Council on May 8, 1963] Ob odnom aspekte reshenia gornykh zadach na optimum; doklad na Uchenom sovete 8 maia 1963 g. Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1963. 11 p.

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KHARCHENKO, A.K., doktor tekhn. nauk, otv. red.; ORLOVA, Ye.P., inzh
otv. red.; ZVIYAGIN, P.Z., prof., doktor tekhn. nauk, otv.
red.

[New developments in the economics of coal and ore deposit
mining] Novoe v ekonomike razrabotki ugol'nykh i rudnykh
mestorozhdenii. Moskva, Nedra, 1965. 294 p.

(MIRA 18:4)

1. Moscow. Institut gornogo dela imeni A.A.Skochinskogo.

YEMEL'YANOV, A.S.; Pilyukhanov, L.S.; ZVYAGIN, F.Z., doktor
tekhn. nauk, retsenzent; KUZ'MICH, A.S., doktor tekhn.
nauk, retsenzent; BUKHALO, S.M., doktor tekhn. nauk,
otv. red.; GOLUBYATNIKOVA, G.S., ved. red.

[Potentialities for improving the economics of coal mines]
Rezervy uluchsheniia ekonomiki ugol'nykh shakht. Moskva,
Nedra, 1964. 255 p. (MIRA 18:2)

KURNOSOV, Anatoliy Mikhaylovich, kand. tekhn. nauk; ROZENTRETER, Boris Aleksandrovich, doktor tekhn. nauk; USTINOV, Mikhail Ivanovich, kand. tekhn. nauk. Prinizali uchastkiye: CHURILOV, A.A., kand. tekhn. nauk; CHERNITSIN, Ye.A., gorn. inzh.; ZVYAGIN, P.Z., doktor tekhn. nauk; POPOVA, Ye.G., gorn. inzh.; SELETSKIY, R.A., kand. tekhn. nauk; GOLOMOLZIN, V.I., kand. tekhn. nauk; SHEVYAKOV, L.D., akademik, otv. red. [deceased]; SUDOPLATOV, A.P., doktor tekhn. nauk, otv. red.

[Scientific principles for the design of coal mines for the mining of flat seams] Nauchnye osnovy proektirovaniia ugol'nykh shakht dlia razrabotki pologikh plastov. Moskva, Izd-vo "Nauka," 1964. 447 p. (MIRA 17:6)

GARKAVI, S.M.; ZVIYAGIN, P.Z.

Speed-up of the working of coal deposits and concentration of mining operations is the most important factor in improving the economics of the operation of coal mines. Gor. i ekon. vop. razrab. ugol'. i rud. mest. no.1:291-309 '62. (MIRA 16:7)
(Coal mines and mining--Labor productivity)

ZVYAGIN, Pavel Zakharovich, doktor tekhn. nauk; BOYKO, A.A., otv. red.;
OSVAL'D, E.Ya., red.izd-va; LOMILINA, L.N., tekhn. red.

[Selection of the capacity and operating period of coal mines;
effectiveness of capital investments in mines] Vybór moshchnosti
i srokov sluzhby ugol'nykh shakht; effektivnost' kapitalovlo-
zhenii na shakhtakh. Moskva, Gosgortekhzdat, 1963. 467 p.
(MIRA 16:4)

(Coal mines and mining--Finance)

BARDIN, I.P., akademik, otv. red. [deceased]; BELYANCHIKOV, K.P.,
nauchnyy red.; YEROFYEV, B.N., nachnyy red.; ZVYAGIN, P.Z.,
nauchnyy red.; KOSHELEV, V.V., nachnyy red.; MELESHKIN, S.M.,
nauchnyy red.; MIRLIN, G.O., nachnyy red.; MOSKAL'KOV, Ye.F.,
nauchnyy red.; POKROVSKIY, M.A., nachnyy red.; SLEDZYUK, P.Ye.,
nauchnyy red.; FINKELSHTEYN, A.S., nachnyy red.; KHARCHENKO,
A.K., nachnyy red.; SHEVYAKOV, L.D., akademik, nachnyy red.;
SHAPIRO, I.S., nachnyy red.; SHIRYAYEV, P.A., nachnyy red.;
OKHRIMYUK, Ye.M., nachnyy red.; YANSHIN, A.L., akademik,
nauchnyy red.; MAKOVSKIY, G.M., red.izd-va; VOLKOVA, V.G., tekhn.
red.

[Oolitic iron ores of the Lisakovka deposit in Kustanay Province
and means for their exploitation] Oolitovye zheleznye rudy Lisa-
kovskogo mestorozhdenia Kustanaiskoi oblasti i puti ikh ispol'-
zovaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 234 p. (Zhe-
lezorudnye mestorozhdenia SSSR [no.1]) (MIRA 15:12)

1. Akademiya nauk SSSR, Institut gornogo dela.
(Kustanay Province--Iron ores)

MELNIKOV, N. V., AGOSHKOV, M. I., PROTODYAKONOV, M. M., BUDOPLATOV, A. P.,
and ZVIYAGIN, P. Z.

"On principles of rational development of mining industry in the USSR"

report to be submitted for the United Nations Conference on the
Application of Science and Technology for the Benefit of the Less
Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

ZVYAGIN, P.Z., kand.tekhn.nauk

Synchronous factor of seam mining in the Donets Basin mines.
Ugol' Ukr. 6 no.219-19 F '62. (MIRA 1512)

1. Institut gornogo dela im. A.A. Skochinskogo.
(Donets Basin--Coal mines and mining)

GOLOMOLZ'IN, Valerian Ivanovich; ZVYAGIN, P.Z., otv. red.;
KHARCHENKO, A.K., otv. red.; SUROVA, V.A., red. izd-va;
BOLDYREVA, Z.A., tekhn. red.; SHKLIAR, S.Ya., tekhn. red.

[Capacity and life of mines] Moshchnost' i sroki sluzhby
shakht. Moskva, Gosgortekhnizdat, 1961. 161 p.

(MIRA 15:7)

(Coal mines and mining)

SHEYKHET, M.N., dotsent, kand.tekhn.nauk; ZVYAGIN, P.Z.

Letters to the editor. Ugol' 35 no. 4:63 Ap '60. (MIRA 14:4)
(Rock pressure)

S/166/62/000/001/009/009
B125/B104

AUTHORS: Kist, A. A., Lobanov, Ye. M., Zvyagin, V. I., Bartnitskiy, I. N.

TITLE: Effect of gamma irradiation upon oxide films of germanium

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1962, 88-90

TEXT: The effect of gamma rays on germanium monoxide and germanium dioxide films produced by etching was quantitatively measured with a Geirovskiy micropolarograph. The monoxide - dioxide mixture produced by etching germanium powder in standard etching agent did not change under gamma irradiation in air, carbon dioxide, and in vacuum (10^{-4} torr) with 20, 60, 100, 150, and 200 million r. In the subsequent irradiation of the weighed portion of germanium etched in a standard reagent with 20, 30, 50, and 100 million r, the amount of germanium dioxide increases at doses of up to 40-50 million r, and then decreases again. The oxide film produced in etching agent no. 5 contains monoxide and dioxide in a 4 : 1 ratio. While etching agent no. 5 gives rise to germanium monoxide, ✓

Card 1/3

S/166/62/000/001/009/003
B125/B104

Effect of gamma irradiation ...

germanium dioxide is contained in the film in an equal amount. The anomalous current and the photocurrent are not exclusively due to the germanium monoxide. Similar phenomena are also observed when exposing the diodes to gamma irradiation (doses above 10^6 r). These anomalies disappear either entirely or partially at doses of more than 10^8 r. The irradiated photodiodes yield a photocurrent at such doses if the amount of germanium dioxide on the surface increases. The upper limit of the anomalous photocurrent shifts toward the visible region when etching agent no. 5 is used. Gamma irradiation first causes the oxide film to grow more considerably, but the secondary fast electrons then again partly destroy the oxide film. As a result, the oxide film becomes eventually thinner. If present considerations are correct, germanium diodes are made insensitive also to intense radiations in that the oxide film is prevented from growing all throughout the dose range. There are 1 figure, 1 table, and 8 references: 2 Soviet and 6 non-Soviet. The four references to English-language publications read as follows: S. I. Ellis, Appl. Phys. 1957, 11, 1262, 28; I. Everest, J. Chem. Soc., Febr. 1953, 660; I. Bardet, Tchakarian A. C. R., 1928, 637, 186; L. Dennis, Xules R. J. Am. Soc., 1930, 3554, 52. ✓

Card 2/3

S/166/62/000/001/009/009
B125/B104

Effect of gamma irradiation ...

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences of the
Uzbekskaya SSR)

SUBMITTED: August 25, 1961

Card 3/3

LEUSHKINA, G.V.; ZVYAGIN, V.I.; LOBANOV, Ye.M.; DUTOV, A.G.

Fluorescence of silicon carbide. Izv. AN Uz. SSR. Ser.
fiz.-mat.nauk 7 no. 6:98-99 '63. (MIRA 17:6)

1. Institut yadernoy fiziki AN UzSSR.

ACCESSION NO: AP4013028

S/0166/63/000/006/0098/0099

AUTHORS: Leushkina, G. V.; Zvyagin, V. I.; Lobanov, Ye. M.; Dumov, A. G.

TITLE: Fluorescence of silicon carbide

SOURCE: AN UzSSR. Seriya fiziko-matematicheskikh nauk, no. 6, 1963, 98-99

TOPIC TAGS: fluorescence, lattice defect, radiation effect, neutron irradiation, gamma ray irradiation, alpha particle irradiation

ABSTRACT: Samples of SiC produced by vacuum recrystallization were irradiated with neutrons, gamma-rays, and alpha-particles to determine their influence on fluorescence of samples at room temperature. For neutron fluxes of $5 \cdot 10^{11}/\text{cm}^2$ the intensity of fluorescence decreased by a factor of 7 in the short ($\sim 6000 \text{ \AA}$) and a factor of 2 in the longer wave length region of the spectrum. The fluorescence disappeared completely for a neutron flux of $2 \cdot 10^{17}/\text{cm}^2$. No significant difference was noted with or without cadmium filters, indicating that the effect is primarily due to fast neutrons. Irradiation of the samples with gamma rays of Co^{60} produced no noticeable change in intensity of fluorescence for doses of $5 \cdot 10^{17}$ photons/ cm^2 , and a slight decrease for doses of $10^{19}/\text{cm}^2$. Likewise, alpha

Card 1/2

BYPAUN, Boris Borisovich; MINSKER, Z.G., doktor khim. nauk, prof.,
otv. red.

[Electrography and structural crystallography of clay
minerals] Elektronografiia i strukturnaia kristallografiia
glinistykh mineralov. Moskva, Izd-vo "Nauka," 1964. 281 p.
(MIRA 17:8)

"Connection of lattice symmetry and generalized symmetry in reciprocal space."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome,
9 Sep 63.

Inst of Crystallography, AS USSR, Moscow.

Effect of the elongated form of crystals on the intensity of reflexes
in electron diffraction pictures of laminated textures. Kristallografiia
7 no.6:958-959 N-D '62. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Electron diffraction examination) (Crystallography);

ZVIAGIN, B. B., kand. geol.-mineral. nauk

"Electron microscopy of metals; apparatus, research methods
and preparation of specimens" by G. S. Gritsaenko, E. S.
Rudnitskaia, A. I. Gorshkov. Reviewed by B. B. Zviagin.
Vest. AN SSSR 33 no.1:135-136 Ja '63. (MIRA 16:1)

(Bibliography—Electron microscopy)
(Gritsaenko, E. S.)
(Rudnitskaia, E. S.)
(Gorshkov, A. I.)

AVACIN, S.B., MISCHENKO, K.S.

Electron diffraction data on the structure of phlogopite-biotite.
Kristallografiia 7 no.4:623-627 J1-Ag '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Electron diffraction examination) (Phlogopite) (Biotite)

← SHAKHOVA, R.A.; SHITOV, V.A.

Some characteristics of the distribution of clay formations
based on structural and mineralogical indicators as revealed
by electronographic data. Trudy VSEGEI 72:57-73 '62.

(Clay--Analysis)

(MIRA 15:9)

ZVIAGIN, B.B.; FRANK-KAMENETSKIY, Y.A.

Concerning E.N. Eliseev's article "Determination of the sizes of clay elementary cells by the X-ray powder pattern (debyeograms)." Min.sbor. no.14:399-402 '60. (MIRA 15:2)

1. Vsesoyuznyy geologicheskii nauchno-issledovatel'skiy institut, Leningrad, i. 2. Gosudarstvennyy universitet imeni A.A. Zhdanova, Leningrad.

(Clay)
(X-ray crystallography)
(Eliseev, E.N.)

~~ZYKOV, B.B.; FRANK-KAMENETSKIY, V.A.~~

In regard to E.N. Eliseev's response to our remarks. Min. sbor.
no.15:406-409 '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut,
Leningrad, i Gosudarstvennyy universitet imeni A.A. Zhdanova,
Leningrad.

(Clay--Analysis)

(X-ray crystallography)

S/070/62/007/006/020/020
E202/E492

AUTHOR:

Zvyagin, B.B.

TITLE:

The effect of the elongated shape of crystals on the distribution of the intensity of reflections in the electronograms derived from platelike textures

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 958-959

TEXT: The author observed the above phenomena on sepiolite and palygorskite crystals and found that the elongated form of crystallites is also indicative of the intensity distribution of reflections derived during the electronographic study of the texture. Assuming the direction of elongation coincident with the principal axis, the inclinations of the crystallites towards the plane of the base of the texture take place chiefly due to the rotation around the principal axis. Hence, it is concluded that each point of the inverse lattice is formed as a result of such a rotation under a certain angle. In this way a spherical belt is generated. The author develops in detail the relations existing in a geometrical model describing such mechanism and formulates the conditions of reflections for the orthogonal and monoclinic lattices. It is suggested that the above model may

Card 1/2

The effect of the elongated ...

S/070/62/007/006/020/020
E202/E492

also be used in the identification of electronogram reflections.
There is 1 figure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii
institut (All-Union Scientific Research Institute of
Geology)

SUBMITTED: April 19, 1962

Theory of the polymorphism of micas. Kristallografiia 6
no.5:714-726 S-0 '61.

(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Mica) (Crystallography)

EVYAGIN, B.B.

Theory of the polymorphism of two-layer (kaolin-like) minerals. Kristallografiia 7 no.1:51-65 Ja-F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.

(Crystallography)

S/070/62/007/004/010/016
E073/E335

AUTHORS: Zvyagin, B.B. and Mishchenko, K.S.

TITLE: Electron-diffraction data on the structure of
phlogopite-biotite

PERIODICAL: Kristallografiya, v. 7, no. 4, 1962, 623-627

TEXT: In preliminary experiments no individual differences could be detected between X-ray diffraction patterns of the variants of these minerals which would reflect the peculiarities in the chemical composition. This was taken as proof of statistical distribution of the isomorphous cations. Therefore, only the properties which are generally characteristic were studied, on electron-diffraction patterns of the textures of one specimen from a collection. 59 reflexions $h0\ell$ and 40 reflexions $0k\ell$ were observed and indexed. The distribution of the reflexions on the electron-diffraction pattern satisfies the monoclinic cell with the parameters: $a = 5.28$; $b = 9.16$; $c = 10.3 \text{ \AA}$; $\beta = 99^\circ 50'$ and the trigonal cell with $c = 30.5 \text{ \AA}$. After two synthesis cycles, the R-factors, which reached values of 17.2% for the reflexions $h0\ell$ and 20.4% for the reflexions $0k\ell$, ceased to improve. The atom coordinates of the phlogopite-biotite

Card 1/3

Electron-diffraction data

S/070/62/007/004/010/016
E073/E335

structure corresponding to this stage as well as the interatomic distances are tabulated and a sketch is given of the structure (normal projection onto the plane xy). The accuracy of determination of the coordinates, evaluated according to the formula of Vaynshteyn, was 0.02 for K atoms, 0.03 for Si, Al and Mg atoms and 0.04 Å for O atoms. From the ideal model the real structure differed by the fact that the tetrahedra formed a motive with ditrigonal loops, corresponding to a shift of the tetrahedra about the vertical by an angle of 5.5° relative to the base, as compared with the position of strictly hexagonal loops. On the other hand, the top and the base of the octahedron did not show any shift relative to the positions corresponding to cubic packing but the octahedra themselves were strongly flattened. Since the Al atoms are probably statistically distributed among the tetrahedral positions, it was not possible to establish the structural distortions caused by them. Probably, in the same way as in muscovite, such substitutions bring about certain shifts of O atoms but, due to their statistical nature, this does not lead to a change in the monoclinic angle as compared with its ideal value.

Card 2/3

Electron-diffraction data S/070/62/007/004/010/016
E073/E335
ASSOCIATION: There are 4 figures and 3 tables.
Vsesoyuznyy nauchno-issledovatel'skiy
geologicheskii institut (All-Union Scientific
Research Geological Institute)
SUBMITTED: June 13, 1961

ZVYAGIN, B.B.; SHCHEGLOV, A.D.

Nacrite from the fluorite deposit of western Transbaikalia and its structural characteristics according to the data of electron diffraction examination. Dokl. AN SSSR 142 no.1:185-188 Ja '64.
(MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
Predstavleno akademikom N.N. Belovym.
(Novo-Pavlovka--Nacrite)
(Electron diffraction examination)

Purpose and principles of the complication and estimation of different classifications of clay minerals; in connection with the discussion innitiated by the Clay Committee at the International Geological Congress. Zap.Vses.min.ob-va 90 no.6:750-754 '61.
(Clay--Congresses) (MIRA 15:2)

VAINSHTEYN, B.K.; PINSKER, Z.G.; LOBACHEV, A.N.; ZVYAGIN, B.B.

Important problems in the theory of modern electron-
diffraction structure study; survey. Zav.lab. 27 no.6:673-682
'61. (MIRA 14:6)

(Electron diffraction examination)

EVLAGIN, B.B.; DOLOMANOVA, Ye.I.; SOBOLEVA, S.V.; MOLEVA, V.A.

Diocahedral Al-mica 1M from the Levo-Ingodinsk tin-tungsten
deposit in Transbaikalia, Dokl. AN SSSR 165 no.2:410-412
N '65. (MIRA 18:11)

1. Submitted May 21, 1965.

ZARYANOV, K.H.; ZAVLADIN, I.V.; ZVYAGIN, B.I.

Method of determination of the depth of cementation of steel
alloys by isothermal hardening. Zav.lab.21 no.6:687-692 '55.
(Cementation (Metallurgy)) (MIRA 8:9)

11/5
661.6
.29
1755

Stroitel'noye chercheniye (Structural designing) 1 ed. 2., parar.
1 dop. Kiev, Mashgiz, 1955.
79 p. illus., diags., tables.
"Literatura": P. 73.

ZYYAGIN, B.K.; CHEBAYEVSKAYA, L.P., red.; SHVETSOV, S.V., tekhn.
red.

[Structural drawing] Stroitel'noe cherchenie. Izd.3., perer.
i dop. IAroslavl', Rosvuzizdat, 1963. 82 p. (MIRA 16:5)
(Structural drawing)

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk; MATS, L.I., inzh., nauchnyy
red.; KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Manual on architectural drawing] Spravochnik po stroitel'nomu
chercheniyu. Leningrad, Gos.izd-vo lit-ry po stroit., arkhitekt. i
stroit. materialam, 1958. 167 p. (MIRA 12:3)
(Architectural drawing)

ZVIAGIN, Boris Konstantinovich; KHAGEMEYSTER, Ye., red.

[Mechanical drawing; "Engineering and structural drawing"
section. Manual] Mashinostroitel'noe cherchenie; razdel
"Inzhenerno-stroitel'noe cherchenie." Uchebnoe posobie.
Leningrad, Severo-zapadnyi zaachnyi politekhn.in-t, 1959.
35 p.

(Mechanical drawing)

(MIRA 13:10)

4VYAGIN, B.M.

General theory and methods for calculating the results of crushing
and subsequent gravity concentration of rocks. Zap. LGI 36 no.3:
43-64 '58. (MIRA 16:5)

(Rocks)

OVYACHIN, G.M., inzh.

Transfer of water over the crest of a curvilinear
spillway with a sharp rim. Izv. vys. uchët. zav.;
energ. 5 no.10:115-123 0 '62. (MIRA 15:11)

1. Moskovskiy inzhenerno-stroitel'nyy institut. Predstavlena
kafedroy gidrotekhnicheskikh sooruzheniy.
(Spillways)

ZVIAGIN, G.Z.

Welding of rails for a continuous track. Put' i put.khoz. 5 no.4:
42-43 Ap '61. (MIRA 14:7)

1. Nachal'nik rel'sosvarochnogo poyezda, st. Lodeynoye pole,
Oktyabr'skoy dorogi.

(Railroads—Rails—Welding)

S/137/61/000/011/053/123
A060/A101

AUTHOR: Zvyagin, G. Z.

TITLE: Welding of rails for a buttless track

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 27, abstract
11Ye169 ("Put' i putevoye kh-vo", 1961, no. 4, 42-43)

TEXT: In six months from October 1960 the rail-welding train of the Oktyabr' railroad system welded 90 km of rails for a buttless track. The production flow on the train is improved, and in particular, the length of the roller path is increased, taking into account the space for checking the welded joints using the defectoscope УЗД НИИМ-5 (UZD NIIM-5); the distance between the welding location and the compartment where the normalization is carried out is increased, allowing the weld to cool down sufficiently in passing from one work-station to another. The rail-cutting mill for cutting out defects is set up near the welding machine, however, the cutting may be carried out at any spot of the line. Prior to welding the rails undergo trimming, the factory butt-cut-off is carefully checked and is carried out again in case of necessity. The welding proceeds on the resistance butt-welding machine MCTP-500-4 (MSGH-500-4)

Card 1/2

S/137/61/000/011/053/123
A060/A101

Welding of rails for a buttless track

from the factory "Elektrik". A productivity of 0.9 - 1.2 km of track is attained in three-shift operation. The welding conditions are: setting pressure - 35 tons, flash magnitude - 20 mm. The stationary value of crushing load is 200 - 220 tons at a deflection of 30 - 50 mm. The continuous feed of the rails to the welder has been introduced lately, for which purpose the rails are connected to each other by small light grapples.

Ye. Terpugov

[Abstracter's note: Complete translation]

AFANASYEV, A.A., ZVYAGIN, B.K.

Shoe Industry

Planning shoe factories. Log.prom. 12, no. 7, 1952,

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952, ~~1953~~, Uncl.

The theory of rock crushing. II. Division of the particles of the products of crushing into two fractions and the calculation of the average composition of these fractions. B. M. Zvyagin, R. B. Rosenbaum, O. M. Todor, and A. Z. Yurovskii. *Izv. Akad. Nauk S.S.S.R., Otd. khim. Nauk* 1931, 1218-20; cf. *ibid.* 1950, 1002. — A method is given for detg. the relative no. of floating and depositing particles by distributing them into 2 fractions. Also, a method for detg. the av. compn. of the floating and depositing fractions is provided. The discussion given is math. G. S. Mary

S/044/62/000/006/067/127
B168/B112

AUTHORS: Todes, O. M., Zvyagin, B. M.

TITLE: A linear method of determining the distribution function of inclusions from their sizes

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 15, abstract 6V78 (Zap. Leningr. gorn. in-ta, v. 37, no. 3, 1959 (1961), 58-63)

TEXT: The case where inclusions (impregnations) have a spherical form (report 6V77) is investigated. A linear method of determining the size distribution of inclusions, in which the lengths of segments of intersections of inclusions are measured as arbitrary straight lines, is proposed. It is noted that this method is simpler, both theoretically and experimentally, than the planimetric method described, for instance, in a work by Verzhbinskiy (report 6V77), although of course it is less accurate. [Abstracter's note: Complete translation.]

Card 1/1

TODES, O.M., prof.; ZVYAGIN, B.M., dots.; BOGORAD, Ye.A., nauchnyy sotrudnik

**Petrographic method of determining the true size of impurities.
Izv.vys.ucheb.zav.; gor.shur. no.4:125-128 '58.**

(MIRA 11:11)

**1. Leningradskiy gornyy institut i Institut goryuchikh iskopa-
yemkh AN SSSR.**

(Coal preparation)

AMOSOV, I.I.; ZVIAGIN, B.M.; TODES, O.M.; YUROVSKIY, A.Z.; MARCHENKO,
M.G., redaktor; IERMIS, I.G., redaktor; POLYAKOVA, T.V., tekhnicheskiiy redaktor.

[Engineering calculations on the theory of exposing minerals in the process of dressing coal.] Inzhenernye raschety k teorii raskrytiia mineralov v protsesse obogashcheniia uglei. Moskva, Izd-vo Akademii nauk SSSR, 1955. 157 p. (MLRA 8:12)
(Coal preparation)

USSR/Minerals - Ores, Dressing

Dec 51

"Theory of Rock Crushing. III. Separating Products of Coarse Crushing in Two Sizes." B. M. Zvyagin, O. M. Todes, A. Z. Yurovsky

"Te Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1825-1840

Attempts to establish optimum conditions of crushing initial products for concn in form of comparatively coarse particles. Discusses distribution of crushed products according to compn, evaluation of final vol of inclusions, integral

205T82

USSR/Minerals - Ores, Dressing (Contd)

Dec 51

Function of distribution and continuous distribution, sepn in 2 fractions, and yield and concn deg of floated product. Submitted A. M. Terpil-gorev.

205T82

USSR/Mining - Mineral Dressing, Wet
Classification
Aug 51

"On the Theory of Rock Crushing. II. Separation
of Crushed Products Into Two Fractions and Cal-
culation of Their Mean Composition," B. M. Zvy-
agin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8,
pp 1218-1229

Develops method for detg relative number of
floated and settled particles during sepn in
liquid into 2 fractions. Suggests also method for
detg mean compn of both fractions and presents

205194

USSR/Mining - Mineral Dressing, Wet
Classification (Contd)
Aug 51

graphs for practical calcs. Gives numerical ex-
ample of calcn. Submitted by Acad A. M. Terpi-
gurev 16 Dec 50.

205194

ZVYAGIN, B. M.

USSR/Minerals - ~~Crushing~~

Jul 50

"Concerning the Theory of Rock Crushing," B. M.
Zvyagin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy, Inst of Fuel Resources, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 1062-
1070

Develops method for analytical calculation of re-
lation between composition of crushed particles
degree of crushing. Method permits finding func-
tion of distribution of crushed particles accord-
ing to composition in process of fine crushing. Sub-
mitted by Acad A. M. Terpigorev.

168756

FDD

ZVYAGIN, B. M.

FDD

Crushing - Ores The

Theory of Crushing of Mineral Rocks," B. M. Zvyagin,
Mining Open of Mineral Grains," A. Z. Yurovsky
B. Rozenbaum, O. M. Todes, A. Z. Yurovsky

12 Ak Nauk SSSR, Otdel Tekh Nauk" No 7,
1062-1070

Formulas governing degree of breaking-up of minerals
crushing crushing have been refined and verified. Authors have
developed method for solving more important problem:

162197
Jul 50

SSSR/Mining - Crushing (Contd)
Submitted 10 Feb 50

to find distribution function of crushed particles
according to their composition.
by Acad A. M. Terpigorev.

162197

ZVYAGIN, B.N.

New automatic match processing machine. Der. prom. 15 no.1:
4-5 Ja '66. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut derevoobrabaty-
vayushchey promyshlennosti.

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk, dots.; KRASIL'NIKOV, A.D.,
dots., retsenzent; LEUTA, V.I., inzh., red.; RUDENSKIY, Ya.V.,
tekhn.red.

[Architectural drawing] Stroitel'noe cherechenie. Izd. 2-oe, perer.
i dop. Kiev, Gos.nauchno-tekhn.izd-vo mashino-stroit. lit-ry.
1955. 79 p. (MIRA 11:2)
(Architectural drawing)

ZVYAGIN, G.Z., inzh.

Rail welding on two production lines. Put' i put. khoz. 9 no.12:
17 '65. (MIRA 19:1)

1. Stantsiya Lodeynoye Pole, Oktyabr'skoy dorogi.

S/181/63/005/002/052/051
B102/B186

24.7700

AUTHOR:

Zvyagin, I. P.

TITLE:

The position of the Fermi level in highly alloyed semiconductors

PERIODICAL:

Fizika tverdogo tela, v. 5, no. 2, 1963, 581 - 585.

TEXT: The effect of high impurity concentrations on the position of the Fermi level is investigated for various degrees of electron gas degeneracy. Electron and impurity concentrations are assumed to be equal and the semiconductor to be isotropic (cf. FTT, 3, 3009, 1961). State density and electron concentrations are calculated from

$$\rho(E) = \frac{4}{(2\pi)^3} \int \ln G(\vec{k}, E) d\vec{k}, \quad (2a)$$

$$n = \int \frac{\rho(E) dE}{1 + \exp[\beta(E - \mu)]} \quad (2b)$$

where $\beta = (\kappa T)^{-1}$, μ - chemical potential, $G(\vec{k}, E)$ the retarded anticommutative Green function averaged over the positions of the impurities;
 $G^{-1}(\vec{k}, E) = G_0^{-1}(\vec{k}, E) + M(\vec{k}, E)$ and $M(\vec{k}, E) = M^{(1)}(\vec{k}, E) + M^{(2)}(\vec{k}, E)$; G_0 is

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S/181/63/005/002/032/051
 B102/B186

The position of the Fermi level ...

the Green function of an ideal gas and $M^{(1)}, (2)$ are the mass operators of electron-impurity and electron-electron interactions. For a completely degenerate gas the operator $p = n\sigma(k_F)/k_F$ is very small and

$$\begin{aligned} \operatorname{Re} M^{(1)}(k, E) &= M_1(k^2, E) = \\ &= \begin{cases} c \frac{E - k^2 - a^2}{(E - k^2 + a^2)^2 + 4k^2a^2} & \text{при } E > 0, \\ 0 & \text{при } E < 0; \end{cases} \end{aligned} \quad (3a)$$

$$\begin{aligned} \lim_{\epsilon \rightarrow +0} \operatorname{Im} M^{(1)}(k, E - i\epsilon) &= M_2(k^2, E) = \\ &= \begin{cases} \frac{c_1 E^{1/2}}{(E + k^2 + a^2)^2 - 4k^2E} & \text{при } E > 0, \\ \frac{c_1 \chi^{1/2}(E) \theta[\chi(E)]}{(\chi(E) + k^2 + a^2)^2 - 4k^2E} \left[1 - \frac{0}{[\chi(E) + (a + \sqrt{-E})^2]} \right]^{-1} & \text{при } E < 0; \end{cases} \end{aligned} \quad (3b)$$

$$M^{(2)}(k; E) = -\frac{2}{\pi} \left(\mu^{1/2} + \frac{\mu - k^2}{2k^3} \ln \left| \frac{\mu^{1/2} + k}{\mu^{1/2} - k} \right| \right) \quad (6)$$

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The position of the Fermi level ...

where $c = 8\pi n\chi^{-1}$, $c_1 = 16\pi n$, $k^2 = \chi(E)$ is the solution of $k^2 - E + M_1(k^2, E) = 0$.

The electron concentration is obtained as

$$n_1 = (6\pi^2)^{-1} c^3, \quad (5a)$$

$$n_2 = (3\pi^2)^{-1} \mu^{3/2} \left[1 + 1.3 \left(\frac{c}{\mu^2} \right)^{1/2} \right], \quad (5b)$$

$$n = (3\pi^2)^{-1} \mu^{3/2} [1 + 0.4 n^{-1/3}]. \quad (5c)$$

and is interrelated with the Fermi level position by $\mu = \mu_0 (1 - 0.27 n^{-1/3})$, where $\mu_0 = (3\pi^2 n)^{2/3}$ is the ideal-gas Fermi level. If the correction for electron-electron interaction ($\Delta\mu = -2\mu^{1/2}/\pi$) is taken into account this relation changes over to $\mu = \mu_0 (1 - 0.2 n^{-1/3})$. Thus, the electron-electron interaction predominates in a completely degenerate semiconductor. The results obtained are generalized for $T \neq 0$, $\beta^{-1} \lesssim \mu$; p is still small, therefore perturbation theory is also applicable.

$$n = (2\pi^2)^{-1} \beta^{-3/2} \left[F_{3/2}(\beta\mu) + 3.5 \frac{\lambda^{-1/2}}{1 + \exp(-\beta\mu)} - 2\lambda^{1/2} F_{3/2}''(\beta\mu) \right], \quad (11)$$

$$\mu = \mu_0 [1 - 0.27 n^{-1/3} - 0.82 (\beta\mu_0)^{-2} (1 - 0.1 n^{-1/3})]. \quad (12)$$

The position of the Fermi level ...

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$$M^{(2)}(k, E) = -\frac{2}{\pi k} \int_0^{\infty} \frac{k' dk' \ln \left| \frac{k+k'}{k-k'} \right|}{1 + \exp[\beta(k'^2 - \mu)]} \quad (13),$$

$\lambda = 0.5d^{1/2}$ if $\beta\mu \gg 1$, $M^{(2)}(k, E)|_{E=\mu_0} = -\frac{2}{\pi} \mu_0^{1/2} (1 + 0.5(\beta\mu_0)^{-2})$. (14). The result that the corrections for electron-electron interaction exceed those for electron-impurity interactions (if $\beta^{-1} \gg \lambda$) holds both at low and at medium temperatures. If in (12) and (14) are only those corrections are taken into account that play a great role with $n \rightarrow \infty$,

$$\mu = \mu_0 \left[1 - \frac{2}{\pi} \mu_0^{-1/2} - \frac{\pi^2}{12} (\beta\mu_0)^{-2} - \pi^{-1} \mu_0^{-1/2} (\beta\mu_0)^{-3} \right]. \quad (15)$$

is obtained; with $n \rightarrow \infty$ μ tends to μ_0 , the chemical potential in the pure semiconductor. When all corrections are taken into account, the degeneracy temperature is obtained as $T_b = T_b^0 (1 - 0.5\mu_0^{-1/2})$. There is 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
 (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: September 18, 1962

Card 4/4

ZVYAGIN, I.P.

Using diagrams in calculating kinetic coefficients. Vest.
Mosk. un. Ser. 3: Fiz., astron. 20 no.5:49-57 S-0 '65.
(MIRA 18:11)

1. Kafedra poluprovodnikov Moskovskogo universiteta.
Submitted May 19, 1964.

ACC NO: AP6033543

SOURCE CODE: UR/0181/66/008/010/2835/2840

AUTHOR: Zvyagin, I. P.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Effect of thermoelectric current on the stability of the electric field and the charge distribution in semiconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2835-2840

TOPIC TAGS: electric field, electron gas, thermoelectric current, semiconductor, temperature, instability

ABSTRACT: The stability of an electric field—charge—temperature—semiconductor system is investigated by means of a set of complete phenomenological equations which describe the distribution of these factors. It is shown that if the thermoelectric current factor is ignored, and if the electron gas is not heated to too high a degree, the conditions which ensue agree with those arrived at earlier by V. L. Bonch-Bruyevich (Fizika tverdogo tela, no. 8, 1753, 1966). The resultant non-

L 09894-87

ACC NR: AP6033543

homogeneity in the pattern of the temperature in the vicinity of the contacts is restricted to an area close to these contacts, and is small in comparison with the size of the sample. This nonhomogeneity does not induce a nonhomogeneous solution for the system's instability region. The author thanks V. L. Bonch-Bruyevich suggesting the study and many valuable discussions of the problem. Orig. art. has: 16 formulas. [Author's abstract]

SUB CODE: 20/ SUBM DATE: 20Nov65/ ORIG REF: 003/ OTH REF: 002/

2/3

STALIN, V.A. and others; DOBROV, Y.I.; ZABOROVSKIY,
S.A., inzh.; ZVYAGIN, I.Ye.; inzh.; KULIKOV, S.N., inzh.; POPOV,
O.V., inzh.

A motor drive with wide-range smooth speed control. Elektrichestvo
no.12:20-23 D '57. (MIRA 10:12)

1.Leningradskiy politekhnicheskii institut im. Kalinina.
(Electric driving)

SOLTAMOV, Bek-Sultan Drisovich. Prinimali uchastiye:
PREOBRAZHENSKIY, L.N., inzh.; KASPAROV, G.D., inzh.;
~~ZVYAGIN, I.Ye., red.~~; KHIVRICH, Ye.D., red. izd-vn;
AKOPOVA, V.M., tekhn. red.

[Automated electric drives in the woodpulp industry]
Avtomatizirovannyye elektroprivody na predpriyatiyakh
tselliulozno-bumazhnoy promyshlennosti. Moskva, Gos-
lesbumizdat, 1963. 268 p. (MIRA 16:12)
(Woodpulp industry--Electric equipment)
(Electric driving)

Veterinary medicine abroad. Veterinariia 40 no.11:73-79 N '63.
(MIRA 17:9)

ZVYAGIN, I.V.; YURCHENKO, V.V.

Prospects for the production of dry immune serum. Veterinarika
(2 no.5:104-105 My '65. (MIRA 18:6)

1. Vsesoyuznyy trust biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

CHOTENKOV, V.P.; BAZHINOV, A.G.; ZVIAGIN, I.V.

Use of β -propiolactone in the production of veterinary biological preparations. Veterinariia 41 no.2:26-27 F '65.

(MIRA 18:3)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva sel'skogo khozyaystva SSSR.

Zvyagin, I. V., Kolesov, S. G.,

"The Seventh International Congress of the Permanent Section on Standardization of Biopreparations."

Veterinariya, Vol 39, no. 1, Jan 1962. pp 82

KOLESOV, S.G.; ZVYAGIN, I.V.

Seventh International Congress of the Permanent Section on
Standardization of Biological Preparations. Veterinariia 39
no.1:82-86 Ja '62. (MIRA 15:2)
(Biological products--Standards)

CHUMAKOV, V.P.; BAZHINOV, A.G.; ZVYAGIN, I.V.

Testing the sterilizing action of beta-propiolactone in the
preparation of biological products. Veterinariia 41 no.11:
23-24 N '64. (MIRA 18:11)

1. Vsesoyuznyy treat biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

BOYKO, A.A.; ZVIAGIN, I.V.

**Veterinary service in the Czechoslovak Socialist Republic.
Veterinaria 41 no.11:112-114 N '64. (MIRA 18:11)**

DONSKOY, Aleksandr Vasil'yevich; LUTSKER, Il'ya Shulimovich;
ZVYAGIN, I.Ye., red.

[Automation of low-temperature electric-heating systems]
Avtomatizatsiia nizkotemperaturnykh elektronagrevatel'-
nykh ustroistv. Leningrad, 1964. 13 p. (MIRA 17:12)

ZVYAGIN, I.Ye.

Servo drive of a regulated high-frequency system. Trudy LPI
240:103-109 '64.

(MMA 17:11)

ZVIYAGIN, L.

A new system of wages is needed for repair and service workers of the truck fleets. Avt.transp. 34 no.4:7-8 Ap '56. (MLBA 9:8)

1. Nachal'nik otдела trada i zarabotnoy platy Leningradskogo tresta
gruzovykh perevozok.

(Wages)

ZVIAGIN, L.M., kand.med.nauk

Intra-osseous transfusions of hydrolysin. Akt.vop.pereb.krovi no.7:
326-329 '59. (MIRA 13:1)

1. Gosptal'naya khirurgicheskaya klinika I Leningradskogo meditsin-
skogo instituta im. Pavlova (zav. klinikoy - prof. F.G. Uglov).
(BLOOD PLASMA SUBSTITUTES)

ZVYAGIN, L.M., kand. med. nauk (Leningrad)

"Special X-ray diagnosis of bone and joint diseases" by
A.E. Rubasheva. Reviewed by L.M. Zviagin. Klin. khir. no.10:83
O '62. (MIRA 16:7)

(BONES—RADIOGRAPHY) (JOINTS—RADIOGRAPHY)
(RUBASHEVA, A.E.)

ZVIYAGIN, L.M.; kandidat meditsinskikh nauk; GIRSHOVICH, E.A.; SOMOVA, V.V.

Transfusion of N.G. Belen'kii's therapeutic serum in insufficient lactation. Akush. i gin. no.3:51-54 My-Je '55 (MLRA 8:10)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (zav. kafedroy-prof. F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav.kafedroy-prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta imeni akad. I.P.Pavlova)

(LACTATION DISORDERS

hypogalactia, ther., serum of Belen'kii)

(BLOOD SERUM

serum of Belen'kii in ther. of hypogalactia)

ZVYAGIN, L.M., kandidat meditsinskikh nauk

**Strangulation of inguinal hernia during labor. Akushi i gin. 33
no.2:104-105 Mr-Ap '57. (MIRA 10:6)**

**1. Iz gosspital'noy khirurgicheskoy kliniki (sav. kafedroy - prof.
F.O.Uglov) i akushersko-ginekologicheskoy kliniki (sav. kafedroy -
prof. I.I.Yakovlev) i Leningradskogo meditsinskogo instituta
imeni akad. I.P.Pavlova.**

(PREGNANCY, COMPLICATIONS OF) (HERNIA)

ZVYAGIN, L.M., kand. med. nauk (Leningrad P-154, Zverinskaya ul. d. 2/5, kv. 50);
YAROSHEVSKAYA, Ye.N., kand. med. nauk

Abstracts of articles received by the editors. Ortop. travm. protez.
24 no.7:75 J1'63 (MIRA 17:2)

1. Iz kafedry gosspital'noy khirurgii (zav. - prof. F.G. Uglov)
I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova i
Detskogo ortopedicheskogo instituta imeni N.I. Turnera (dir. -
prof. M.N. Goncharova).

ZVYAGIN, L.M., kand.med.nauk (Leningrad, pl. L.Tolstogo d.6.8)

BARBOI, Ye.I., kand.med.nauk

Clinical characteristics of hydrolsin L-103 [with summary in English]
Vest.khir. 81 no.8:50-54 Ag '58 (MIRA 11:9)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov)
1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.
(AMINO ACID MIXTURES, THER. use.
hydrolsin L-103 (Rus))

SHEVYAKOV, Lev Dmitriyevich, akademik; ZVIAZH, P. A., stv.red.; KOROYENKOVA,
Z.A., tekhn.red.; PROZOROVSKAYA, V.L., tekhn.red.

[Principles of the theory of planning coal mines] Osnovy teorii
proektirovaniia ugol'nykh shakht. Izd.2., perer. Moskva, Ugle-
tekhizdat, 1958. 328 p. (MIRA 12:3)
(Mining engineering)

KOROTKOV, P.A.; LITVINOVA, Ye.I.; Prinsipali uchastiy: ZVYAGIN, M.I.;
ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during
heating and cooling. Izv. vys. ucheb. zav.; Chern. met. 6 no.11:
194-199 '63. (MIRA 17:3)

1. Leningradskiy tekhnologicheskii institut im. Lensoвета.

Grease for guns, etc. M. M. Zvyagin, Russ. 62,435,
Jan. 31, 1958. A mixt. of rubber, mineral oil, soap and
butyl or amyl alcohol or other solvents is specified.

ASD-SLA METALLOGICAL LITERATURE CLASSIFICATION

PRECISES AND PROPERTIES INDEX

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Treating cracked distillates with zinc chloride. A. VENTIKUS AND N. ZUYAGIN
Nefteyanoe Khozyaistvo 23, 130-9 (1932).—A discussion on the com. possibility of treat-
ment with $ZnCl_2$, including yields of the finished product. A. A. BOHRLINGER

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CERAMIC ELEMENT

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73 74 75 76 77 78 79 80 81 82 83 84

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97 98 99 100 101 102 103 104 105 106 107 108

ca

Economics of cracking. F. F. DUNAY AND N. Z. ZYKALIN. *Neftekhimicheskiy Zhurnal* 22, 69-80(1937).—The cost of one metric ton of gasoline is 14.51 roubles as compared with 10.80 roubles in the United States. The cost is 21.77 and 20.57 roubles in the Jenkins and Vickers units installed in Russia.

A. A. BORITLINAK

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ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

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CIA-RDP86-00513R002065720006-3

QIA-RDP86-00513R00200572000671

Economic substantiation of the minimum workable thickness of anthracite beds in the Donets Basin. Ugol' Ukr. 3 no.7:40-45 J1 '59. (MIRA 12:11

(Donets Basin--Anthracite coal)

ZVYAGIN, P.Z., kand. tekhn. nauk.

Minimum thickness required of coal seams for underground mining.
Ugol' 34 no.11:34-39 N '59 (MIRA 13:3)
(Coal mines and mining--Cost)

ZVYAGIN, Pavel Zakharovich; MAYZEL', Leonid Lazarevich; OSTROVSKIY,
S.B., retsenzent; GOLUBYATNIKOVA, G.S., red.izd-va; BEREZSLAVSKAYA,
L.Sh., tekhn.red.

[Economic justification for the minimum workable thickness of
coal seams; underground mining] Ekonomicheskoe obosnovanie minimal'noi
rabochei moshchnosti ugol'nykh plastov; pri podzemnoi razrabotke.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 143 p.
(MIRA 13:11)

(Coal mines and mining)

Comparative effectiveness of the panel and modified
longwall systems for mine development. Ugol' Ukr. 4
no.5:41-42 My '60. (MIRA 13:8)

1. Institut gornogo dela AN SSSR.
(Coal mines and mining)

ZVYAGIN, P.Z.; NILOVSKIY, V.A.

Coal mining industry could and should increase its labor
productivity; from results of the Conference of Ore and
Coal Mining Workers of the Krivoy Rog Basin. Ugol' 35
no.10:6-10 0'60. (MIRA 13:10)
(Krivoy Rog Basin--Coal mines and mining--Labor
productivity)

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065720006-3

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720006-3
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065720006-3"
KREAGIN, P.Z.; KAMINSKY, I.N., inzh.; POLYAKOV, N.V.;
KHARCHENKO, A.K., kand.tekhn.nauk

For a further upswing of labor productivity in mines of the Rostovugol' Combine. Ugol' 35 no.11:13-17 N '60. (MIRA 13:12)

1. Glavnyy inzhener kombinata Rostovugol'.
(Donets Basin--Coal mines and mining--Labor productivity)

BAGASHEV, Mikhail Kapitonovich; KIRZHNER, David Mironovich; CHETIRKIN, Mikhail Ivanovich. Prinimal uchastiye SURILO, G.V. ZVYAGIN, P.Z.,
otv.red.; GOLUBYATNIKOVA, G.S., red.isd-va; OSVAL'D, B.Ia., red.
isd-va; GALANOVA, V.V., tekhn.red.

[Reference book on the economics of the coal industry] Spravochnik
po ekonomike ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn.
isd-vo lit-ry po gornomu delu, 1961. 418 p.

(Coal mines and mining)

(MIRA 14:4)

ZVYAGIN, P. Z., Doc TECH SCI, "SELECTION OF ^{productivity} ~~OUTPUT~~ AND ^{service} ~~AND~~
LIFE OF COAL MINES." MOSCOW, 1961. (MIN OF HIGHER AND
SEC SPEC ED RSFSR. LENINGRAD ORDERS OF LENIN AND LABOR
RED BANNER MINING INST IMENI G. V. PLEKHANOV). (KL-DV,
11-61, 216).

Effect of the factor of efficiency of capital investments
in determining the productivity of the mine. Ugol' 36
no.6:39-44 Je '61. (MIRA 14:7)

1. Institut gornogo dela imeni A.A. Skochinskogo.
(Mine valuation)
(Coal mines and mining--Finance)

KHARCHENKO, A.K., kand. tekhn. nauk; ZVYAGIN, P.Z., kand. tekhn.
nauk, red.; OSVAL'D, E.Ya., red.izd-va; IL'INSKAYA, G.M.,
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APPROVED FOR RELEASE: Thursday, September 26, 2002
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S/166/62/000/001/009/009
B125/B104

AUTHORS: Kist, A. A., Lobanov, Ye. M., Zvyagin, V. I., Bartnitskiy, I. N.

TITLE: Effect of gamma irradiation upon oxide films of germanium

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1962, 88-90

TEXT: The effect of gamma rays on germanium monoxide and germanium dioxide films produced by etching was quantitatively measured with a Geirovskiy micropolarograph. The monoxide - dioxide mixture produced by etching germanium powder in standard etching agent did not change under gamma irradiation in air, carbon dioxide, and in vacuum (10^{-4} torr) with 20, 60, 100, 150, and 200 million r. In the subsequent irradiation of the weighed portion of germanium etched in a standard reagent with 20, 30, 50, and 100 million r, the amount of germanium dioxide increases at doses of up to 40-50 million r, and then decreases again. The oxide film produced in etching agent no. 5 contains monoxide and dioxide in a 4 : 1 ratio. While etching agent no. 5 gives rise to germanium monoxide, ✓

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S/166/62/000/001/009/003
B125/B104

Effect of gamma irradiation ...

germanium dioxide is contained in the film in an equal amount. The anomalous current and the photocurrent are not exclusively due to the germanium monoxide. Similar phenomena are also observed when exposing the diodes to gamma irradiation (doses above 10^6 r). These anomalies disappear either entirely or partially at doses of more than 10^8 r. The irradiated photodiodes yield a photocurrent at such doses if the amount of germanium dioxide on the surface increases. The upper limit of the anomalous photocurrent shifts toward the visible region when etching agent no. 5 is used. Gamma irradiation first causes the oxide film to grow more considerably, but the secondary fast electrons then again partly destroy the oxide film. As a result, the oxide film becomes eventually thinner. If present considerations are correct, germanium diodes are made insensitive also to intense radiations in that the oxide film is prevented from growing all throughout the dose range. There are 1 figure, 1 table, and 8 references: 2 Soviet and 6 non-Soviet. The four references to English-language publications read as follows: S. I. Ellis, Appl. Phys. 1957, 11, 1262, 28; I. Everest, J. Chem. Soc., Febr. 1953, 660; I. Bardet, Tchakarian A. C. R., 1928, 637, 186; L. Dennis, Xules R. J. Am. Soc., 1930, 3554, 52. ✓

Card 2/3

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B125/B104

Effect of gamma irradiation ...

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences of the
Uzbekskaya SSR)

SUBMITTED: August 25, 1961

LEUSHKINA, G.V.; ZVYAGIN, V.I.; LOBANOV, Ye.M.; DUTOV, A.G.

Fluorescence of silicon carbide. Izv. AN Uz. SSR. Ser.
fiz.-mat.nauk 7 no. 6:98-99 '63. (MIRA 17:6)

1. Institut yadernoy fiziki AN UzSSR.

ACCESSION NO: AP4013028

S/0166/63/000/006/0098/0099

AUTHORS: Leushkina, G. V.; Zvyagin, V. I.; Lobanov, Ye. M.; Dumov, A. G.

TITLE: Fluorescence of silicon carbide

SOURCE: AN UzSSR. Seriya fiziko-matematicheskikh nauk, no. 6, 1963, 98-99

TOPIC TAGS: fluorescence, lattice defect, radiation effect, neutron irradiation, gamma ray irradiation, alpha particle irradiation

ABSTRACT: Samples of SiC produced by vacuum recrystallization were irradiated with neutrons, gamma-rays, and alpha-particles to determine their influence on fluorescence of samples at room temperature. For neutron fluxes of $5 \cdot 10^{11}/\text{cm}^2$ the intensity of fluorescence decreased by a factor of 7 in the short ($\sim 6000 \text{ \AA}$) and a factor of 2 in the longer wave length region of the spectrum. The fluorescence disappeared completely for a neutron flux of $2 \cdot 10^{17}/\text{cm}^2$. No significant difference was noted with or without cadmium filters, indicating that the effect is primarily due to fast neutrons. Irradiation of the samples with gamma rays of Co^{60} produced no noticeable change in intensity of fluorescence for doses of $5 \cdot 10^{17}$ photons/ cm^2 , and a slight decrease for doses of $10^{19}/\text{cm}^2$. Likewise, alpha

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